

IN THE CLAIMS

1. (currently amended) A method of replacing at least a portion of an intervertebral disc of an intervertebral disc space of a spinal column, the intervertebral disc space defined at least by respective endplates of first and second adjacent vertebral bones, the method comprising:

inserting at least one intervertebral disc replacement trial into the intervertebral disc space to distract same in a direction along a longitudinal axis of the spinal column;

providing first and second members of an intervertebral disc replacement device as a single unit by way of an intervening insertion plate and an insertion handle that is adapted to detachably engage the insertion plate in order to manipulate the first and second members as a single unit, such that the first and second members may be at least one of inserted into and moved within the intervertebral disc space without substantially changing their orientation with respect to one another;

simultaneously inserting the first and second members of the intervertebral disc replacement device into the intervertebral disc space of the spinal column, the first member including a first articulation surface having a first curved surface and the second member including a second articulation surface having a second curved surface capable of articulating with the first curved surface, wherein the first and second articulation surfaces of the respective first and second members of the intervertebral disc replacement device are in substantial registration with one another during their simultaneous insertion into the intervertebral disc space;

fixing the first member to the first vertebral bone and the second member to the second vertebral bone while the first and second members remain as the single unit by way of the insertion plate; and

causing first and second vertebral bones to move with respect to each other, such that the first and second members articulate with respect to one another.

2. (original) The method of claim 1, wherein the step of inserting at least one intervertebral disc replacement trial includes using a set of intervertebral disc replacement trials to displace the intervertebral disc space, at least two of the intervertebral disc replacement trials having differing head thicknesses to facilitate distraction of the vertebral bones along the longitudinal axis.

3. (original) The method of claim 2, further comprising:
inserting a first of the trials into the intervertebral disc space to facilitate at least some distraction of the first and second vertebral bones; and

inserting a second of the trials into the intervertebral disc space to facilitate at least some further distraction of the first and second vertebral bones, where the second trial has a larger head thickness than that of the first trial.

4. (original) The method of claim 3, further comprising repeating the insertion of further trials having larger and larger head thicknesses to facilitate the distraction of the vertebral bones to a target distance, wherein the target distance is one that substantially maximizes the intervertebral space while substantially preserving an annulus and ligaments associated with the vertebral bones.

5. (original) The method of claim 1, further comprising leveraging a handle of the at least one trial to facilitate the distraction of the first and second vertebral bones.

Claims 6-8 (canceled)

9. (original) The method of claim 7, wherein the insertion handle, insertion plate and the first and second members are provided in a sterile assembly in a package for access by a surgeon.

10. (currently amended) A method of replacing at least a portion of an intervertebral disc of an intervertebral disc space of a spinal column, the intervertebral disc space defined at least by respective endplates of first and second adjacent vertebral bones, the method comprising:

maintaining first and second members of an intervertebral disc replacement device as a single assembly by way of an insertion plate, wherein first and second articulation surfaces of the respective first and second members of the intervertebral disc replacement device are in substantial registration with one another during their simultaneous insertion into the intervertebral disc space, the first articulation surface including a first curved surface and the second articulation surface including a second curved surface capable of articulating with the first curved surface;

using an insertion handle that is adapted to detachably engage the insertion plate in order to manipulate the first and second members as a single unit such that they may be at least one of inserted into and moved within the intervertebral disc space without substantially changing their orientation with respect to one another;

manipulating an actuator of the insertion handle to cause detachment of the insertion plate from the insertion handle;

fixing the first member to the first vertebral bone and the second member to the second vertebral bone while the first and

second members are maintained as the single unit by way of the insertion plate; and

causing first and second vertebral bones to move with respect to each other, such that the first and second members articulate with respect to one another.

11. (original) The method of claim 10, further comprising:

engaging a drill guide with the insertion plate;

inserting a drill bit through at least one guide bore of the drill guide to align the drill bit with an area of one of the vertebral bones to which one of the first and second members of the intervertebral disc replacement device is to be attached; and

drilling the vertebral bone.

12. (original) The method of claim 11, further comprising using the drill guide to urge the first and second members of the intervertebral disc replacement device into a target position within the intervertebral disc space before drilling the vertebral bone.

13. (original) The method of claim 11, wherein:

engaging the drill guide with the insertion plate comprises orienting the drill guide into a first alignment mode with respect to the insertion plate such that the at least one guide bore aligns with an area of the first vertebral bone to which the first member of the intervertebral disc replacement device is to be attached; and

drilling the vertebral bone comprises drilling at least one hole in the first vertebral bone.

14. (currently amended) The method of claim 13, further comprising:

- disengaging the drill guide from the insertion plate;
- engaging the insertion handle with the insertion plate;
- using the insertion handle to urge the first and second members of the intervertebral disc replacement device into a target position within the intervertebral disc space; and

- driving at least one screw through at least one bone screw hole of the first member of the intervertebral disc replacement device and into the at least one hole to connect the first member to the first vertebral bone; and disengaging the insertion handle from the insertion plate.

15. (original) The method of claim 14, further comprising:

- orienting the guide member into a second alignment mode with respect to the insertion plate such that the at least one guide bore aligns with an area of the second vertebral bone of the intervertebral disc space to which the second member of the intervertebral disc replacement device is to be attached; and

- drilling at least one hole in the second vertebral bone.

16. (currently amended) The method of claim 15, further comprising:

- disengaging the drill guide from the insertion plate;
- engaging the insertion handle with the insertion plate;
- using the insertion handle to urge the first and second members of the intervertebral disc replacement device into the target position within the intervertebral disc space; and

- driving at least one screw through at least one bone screw hole of the second member of the intervertebral disc replacement device and into the at least one hole to connect the second member to the second vertebral bone; and

disengaging the insertion handle from the insertion plate.

17. (original) The method of claim 16, further comprising: removing the insertion plate.

18. (original) The method of claim 17, further comprising fastening at least one screw retaining element to at least one of the first member of the intervertebral disc replacement device, the second member of the intervertebral disc replacement device, the first vertebral bone, and the second vertebral bone, wherein the screw retaining element is operable to resist the at least one screw of the first member and the at least one screw of the second member from backing out of the respective vertebral bones.

19.(new) The method of claim 1, wherein the providing step includes attaching the insertion plate to a first mounting hole of the first member and attaching the insertion plate to a second mounting screw hole of the second member.

20. (new) The method of claim 19, wherein the insertion plate is connected with the first and second mounting screw holes by screws.

21. (new) The method of claim 19, wherein the fixing step includes placing a first bone screw through a first bone screw hole of the first member and placing a second bone screw through a second bone screw hole of the second member.

22. (new) The method of claim 1, further comprising the step of removing the insertion plate from the first and second members.

23. (new) The method of claim 10, wherein the maintaining step includes attaching the insertion plate to a first mounting hole of the first member and attaching the insertion plate to a second mounting screw hole of the second member.

24. (new) The method of claim 23, wherein the insertion plate is connected with the first and second mounting screw holes by screws.